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CLAIMS:

1. An instrument for deploying a bone cement material in a bone cavity, the material being formed from two reactive components which, when mixed, react to form a useable cement, the instrument comprising:

- a. a chamber in which the components of the material can be mixed,
- b. a mixing tool which extends into the chamber, and which can be manipulated from outside the chamber, to cause the components of the material to mix,
- c. an outlet from the chamber through which the mixed material can be discharged from the chamber after it has mixed,
- d. a piston which can be moved through the chamber to apply positive pressure to mixed material within the chamber, to displace the mixed material from the chamber through the outlet into the bone cavity,
- e. a sealing component which fits over the bone cavity to seal the cavity around the chamber outlet and to minimise leakage of bone cement that has been injected into the cavity,
- f. a sensor for measuring the pressure to which the bone cement is subjected during displacement from the chamber.

2. An instrument as claimed in claim 1, in which a pressure sensor is located in at least one of:

- a. the wall of the chamber towards which the piston moves to discharge mixed cement material through the chamber outlet,
- b. the face of the piston which faces towards the end wall of the chamber,
- c. the outlet from the chamber,
- d. the sealing component.

3. An instrument as claimed in claim 2, in which the pressure sensor is located in or close to the face of the sealing component which faces into the bone cavity.

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4. An instrument as claimed in claim 1, in which the sealing component comprises:

- a. a sealing plate which can be fitted over the bone cavity and has a quantity of a resiliently deformable material on its lower face to enable a seal to be created between the plate and the edge of the bone, and
- b. a plug which has an injection port extending through it in which the outlet can be received,

the sealing plate having an opening extending through it (i) in which the plug which can be received, and (ii) through which a prosthesis which is to be bonded to the bone of the cavity by the bone cement can be inserted into the cavity after injection of the cement and removal of the plug.

5. An instrument as claimed in claim 4, in which the pressure sensor is located in the sealing plate.

6. An instrument as claimed in claim 1, in which the pressure sensor generates a signal which is representative of the pressure to which the bone cement is subjected during displacement from the chamber, and in which the signal gives rise to an indication of the said pressure which is audible or visible.

7. An instrument as claimed in claim 6, in which the pressure sensor causes a warning signal to be generated when the pressure to which the bone cement is subjected during displacement from the chamber is less than about 3 kPa.

8. An instrument as claimed in claim 1, in which the pressure sensor generates a signal which is representative of the pressure to which the bone cement is subjected during displacement from the chamber, and in which the signal can be arranged to cause the pressure that is applied to the bone cement by the piston to be changed when the pressure is outside a pre-determined range.